

# Earth-Friendly Training

Story and Photos by Ken Perrotte



Special forces soldiers emerge from the water during the “rescue” of “hostages” taken during a training exercise at Fort A.P. Hill.

**A**RTILLERY rounds explode yards in front of the trench system housing a small group of defenders. The enemy is just outside the razor-sharp concertina marking the outer edge of the camp.

Machine guns open up, flame pouring from their muzzles. Smoke begins obscuring the defenders’ view and it’s not long before they all fall “dead or wounded.”

Hundreds of spectators, standing just 10 yards away from the command bunker, burst into applause.

This bit of military theater staged by members of the 3rd Infantry Regiment has a specific purpose — to illustrate how infantry units use Fort A.P. Hill, Va., and especially its environmental and terrain features — to train for combat success.

The “show” was staged last summer for several hundred visiting Integrated Training Area Management specialists. They came to learn of the latest in training-land management and visit a field location where leading-edge concepts are being deployed. Fort A.P. Hill’s portion of the program

featured a mix of field laboratory exhibits and realistic infantry and special forces training.



Fort A.P. Hill is a 76,000-acre installation specializing in training, maneuver and live-fire operations. Units from throughout the Department of Defense and allied nations, as well as other U.S. governmental agencies, train year-round on the post.

The scene of the assault on the trench system was a preconstructed infantry-training lane. The lanes have assembly areas, a maneuver lane and a fixed objective at the end. The trench system, one of several on the post, was a 1998 ITAM-related project and is designed to represent the fighting positions used by potential adversaries.

Bruce L. Hopkins, Fort A.P. Hill’s civilian deputy to the commander, cites a portion of the ITAM program known as “LRAM,” or Land Rehabilitation and Maintenance, as crucial in managing the post’s 22 training lanes.

“In just a few years, we found our infantry-lane objectives had deteriorated dramatically due to frequent use. Using LRAM funding, we were able to rebuild all objective fortifications using durable materials expected to last for years. This should reduce the maintenance needs of these training sites,” Hopkins explained.

One area where the installation is setting the Army’s pace is monitoring

and rehabilitating tactical concealment areas, otherwise known as bivouac or tactical operations center sites.

Fort A.P. Hill has more than 70 TCA locations. The areas feature defensive fighting positions, mission-planning sites, largely unimproved roads and trails, and other attributes conducive to setting up a bivouac.

“More than 50 years of use resulted in some areas facing soil erosion, tree damage and the loss of foliage so critical to tactical concealment,” Hopkins said.

Existing areas were showing the wear, and some prospective areas were affected by the lack of an integrated program that took all uses of the land into account. Hopkins told of a



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battalion commander years ago who was looking for a TOC site by studying maps, first locating what appeared to be areas meeting the criteria of having a flat ridge with a decent road or trail network and overhead cover.

Visiting each site, the commander was dismayed to find them devoid of trees. It turns out that the installation forester used similar criteria when looking for areas to harvest timber. Today, no timber harvesting takes place without close coordination with training managers.

A program begun three years ago calls for an inventory of all bivouac sites. Site condition is assessed, and a course of action is established to ensure viability for another 50 years.



Fort A.P. Hill developed a partnership with the U.S. Forest Service and embarked on a program of clearing deadfall and diseased trees, rehabilitating injured trees, protecting exposed roots, and planting a mix of new trees that provide overhead cover and horizontal concealment regardless of the time of year.

Fort A.P. Hill was a DOD pioneer in developing Geographic Information System databases for use in creating training-customer maps. In the customer service center, soldiers can sit down at a computer loaded with software connected to the GIS database. Within minutes, they're generating custom maps or getting aerial photos using the hundreds of information layers residing in the database.

"These terrain-analysis products are a trainer's dream," Hopkins declared.

"You can get terrain contours at two-foot intervals, or photo maps of vegetation, plus other types of information that support tactical planning and decision making," he said.

"The facilities and land information loaded on the A.P. Hill computer allows trainers to conduct initial recon on-line, versus having to spend hours driving around looking at potential sites. A unit training NCO or officer can quickly narrow it down to a couple of sites that will support mission goals and then go out to physically assess the location. It's a tremendous time saver — and, of course, time is money," he added.

The GIS work evolved into Fort A.P. Hill becoming home to one of three ITAM regional support centers. The center now serves 75 locations in the United States and Europe with geographic information system products and technical support. Linking remotely, customers planning training events can map significant terrain features, cultural or historical sites that need to be avoided, or a multitude of other options that give planners much more than just the lay of the land.



Military training makes noise, and Fort A.P. Hill is one of DOD's leaders in assessing training noise, and in taking steps to ensure off-post neighbors are not adversely impacted by the booms and bangs of training.

A key tool in this effort is the information obtained from the blast analysis and measurement noise sensors that measure decibel spread both on and off post. The sensor's design is based on the Boom Analysis and Measurement Sensor System, or BAM, developed for the Air Force.

When a particularly noisy training event is scheduled, noise levels are

monitored and then matched against atmospheric conditions. Weather is the biggest determinant on the impact of noise and vibration. Days with low overcast tend to keep the sound down near the ground, while sunny days with low humidity allow sound to dissipate upward. Wind direction also has a bearing on sound.

Fort A.P. Hill has used data from the sensors to change the way training is conducted, and works closely with units to ensure the necessary noise they make has minimal impact on the environment.

Hopkins says the total package is important: "This land — our overall environment, actually — is precious, and we need to do all we can to help it stay healthy and sustainable for the important combat training work that takes place here. We need to keep bridging the gap between military training and environmental considerations." □



**Snipers SFC Adrein Leavitt (foreground) and SSG Mike Hubbel attempt to blend in with the scenery before engaging the "terrorists."**



**The snipers lead a captured "terrorist" to a waiting helicopter at the conclusion of the exercise.**